

# CANADIAN MAGNESITE MINES LIMITED

Second Annual Report

For the Year Ended  
NOVEMBER 30, 1964

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CANADIAN MAGNESITE MINES LIMITED

SUITE 911, 159 BAY STREET

TORONTO 1, ONTARIO

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OFFICERS

A. T. GRIFFIS -	- - - - -	President
A. D. COSSAR -	- - - - -	Vice-President
R. A. EAGLESON -	- - - - -	Secretary-Treasurer

DIRECTORS

A. T. GRIFFIS	A. D. COSSAR
J. F. McOUAT	R. A. EAGLESON
	C. MILLER

CONSULTING ENGINEERS

WATTS, GRIFFIS AND McOUAT

REGISTRAR AND TRANSFER AGENT

GUARANTY TRUST COMPANY OF CANADA

366 Bay Street, Toronto 1, Ontario

AUDITORS

MCLEOD, DICKSON AND COMPANY

*Chartered Accountants*

75 Eglinton Avenue East

Toronto, Ontario

## PRESIDENT'S REPORT

TO THE SHAREHOLDERS,  
CANADIAN MAGNESITE MINES LIMITED.

Our efforts in 1964 were directed toward the production of dead-burned magnesite acceptable as a high temperature refractory material. Throughout the year negotiations with potential consumers and partners were carried on, but our efforts along these lines were hampered by our inability to supply samples of dead-burned product of high quality. This problem has now been overcome and it appears that the product we are now making is being well received by potential consumers.

During the year we mined 2,000 tons of crude from our Deloro Township deposit and concentrated it at the pilot plant of Nova Beaucage Mines Limited, seven miles west of North Bay. The grade of this material was very close to the average grade indicated from drilling and we had no difficulty in making an efficient recovery of concentrate.

We did, however, run into a serious technical problem in making acceptable dead-burned product. It was found quite unexpectedly that our magnesite as produced is very active chemically after dead-burning. This problem and the steps taken to overcome it are discussed in the Manager's Report. I am pleased to be able to tell you that the problem has been solved by very fine grinding before dead-burning by adding a small amount of boric acid. These two steps give a dense, inactive, dead-burned material.

A year or more ago we reviewed all the available data on costs of producing magnesite and decided that we should aim at a product grading 92 to 93% recovered by standard methods of physical concentration. We have reviewed our data and have completed a detailed survey of market and product specification. These studies substantiate the view that there is a large market for magnesite in the grade range we are planning.

In following through, we have prepared several hundred pounds of dead-burned material which is being tested by possible consumers. When we have the results of tests on these samples we will be in a position to determine how best to furnish the large samples that will be necessary for field trial use.

We are confident that we can make a superior magnesite refractory, that there is a large market and that the sale of our product holds promise of considerable profit. Your management plans to take further positive action during the coming year in development of this important property.

I would like to take this opportunity to thank the shareholders of the company for their continued loyalty. This project has taken a good deal longer and has been more troublesome than was originally anticipated. Nevertheless your directors feel that we will bring this project to a successful conclusion.

On behalf of the Board,

A. T. GRIFFIS, *President*

**CANADIAN MAGNESITE MINES LIMITED**  
 (Incorporated under the laws of Ontario)

**BALANCE SHEET**  
**As at November 30, 1964**

**Assets**

CASH .....	\$ 18,724.26
INTEREST RECEIVABLE .....	7,910.00
INVESTMENTS — at cost (market value \$400,815.15) .....	400,815.15
<b>MINING PROPERTIES — At Cost:</b>	
60 patented mining claims and 10 unpatented mining claims purchased, all in the District of Temiskaming, Province of Ontario.	
Patented Claims:	
Cash .....	\$ 8,000.00
Shares — 442,500 valued by the directors at .....	122,500.00
\$ 130,500.00	
Unpatented Claims:	
Shares — 500,000 valued by the directors at .....	50,000.00
\$ 180,500.00	
DEFERRED EXPENDITURE .....	381,561.95
<b>OTHER ASSETS:</b>	
Expense advances .....	\$ 500.00
Organization expense .....	2,771.88
	3,271.88
	<u>\$992,783.24</u>

**Liabilities**

ACCOUNTS PAYABLE AND ACCRUED CHARGES .....	\$ 27,075.11
BANK LOAN — secured (\$275,000.00 U.S.) .....	296,953.13

**CAPITAL**

<b>SHARE CAPITAL — Note 1</b>	
Authorized — 5,000,000 shares of \$1.00 each .....	<u>\$ 5,000,000.00</u>
<b>Issued and Fully Paid:</b>	
942,500 shares for mining properties .....	\$ 942,500.00
Less: Discount .....	770,000.00
	<u>\$ 172,500.00</u>
1,175,005 shares for cash .....	\$ 1,175,005.00
Less: Discount .....	678,750.00
	<u>\$ 496,255.00</u>
2,117,505 shares .....	668,755.00
	<u>\$992,783.24</u>

**Auditors' Report**

To the Shareholders,  
**CANADIAN MAGNESITE MINES LIMITED.**

We have examined the balance sheet of Canadian Magnesite Mines Limited as at November 30, 1964, and the statement of deferred expenditure from incorporation to that date and have received all the information and explanations that we have required. Our examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as we considered necessary in the circumstances.

In our opinion, the accompanying balance sheet and statement of deferred expenditure present fairly the financial position of the company as at November 30, 1964, and the results of its operations from incorporation to that date, in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Toronto, Ontario.  
 June 9, 1965.

MCLEOD, DICKSON & CO.  
 Chartered Accountants.

# CANADIAN MAGNESITE MINES LIMITED

## STATEMENT OF DEFERRED EXPENDITURE From Incorporation to November 30, 1964

### Exploration and Development

	Incorporation to November 30, 1963	Year Ended November 30, 1964	TOTAL
Engineering .....	\$ 3,917.25	\$ 5,034.45	\$ 8,951.70
Consulting .....	11,800.00	12,000.00	23,800.00
Maps .....	679.14	109.23	788.37
Line cutting .....	318.00	—	318.00
Trenching .....	600.00	—	600.00
Diamond drilling .....	11,931.14	—	11,931.14
Samples and assays .....	3,113.74	399.05	3,512.79
Equipment rental .....	244.00	—	244.00
Field travel .....	2,668.29	928.36	3,596.65
Road survey .....	736.88	—	736.88
Mining licenses .....	200.00	—	200.00
Acreage taxes .....	—	271.33	271.33
Research and development .....	37,898.94	19,082.13	56,981.07
Market survey .....	8,137.33	4,788.22	12,925.55
Mining .....	—	22,314.21	22,314.21
Road maintenance .....	—	3,202.67	3,202.67
Pilot plant engineering .....	4,610.98	655.26	5,266.24
Pilot plant operation .....	—	158,565.49	158,565.49
Freight on ore to pilot plant .....	—	10,839.84	10,839.84
Salaries .....	—	5,350.00	5,350.00
Insurance .....	—	412.31	412.31
	<u>\$ 86,855.69</u>	<u>\$243,952.55</u>	<u>\$330,808.24</u>

### Administration

Bank charges and exchange .....	\$ 455.61	\$ 22.13	\$ 477.74
Interest expense .....	—	9,506.37	9,506.37
Legal and audit .....	909.40	12,568.78	13,478.18
Management .....	8,000.00	12,000.00	20,000.00
Miscellaneous .....	490.49	1,115.33	1,605.82
Office supplies .....	185.56	39.14	224.70
Printing .....	1,012.35	2,648.60	3,660.95
Registrar and transfer agent .....	585.75	909.59	1,495.34
Stock exchange fees .....	—	2,000.00	2,000.00
Telephone and telegraph .....	524.43	622.20	1,146.63
Travel and promotion .....	6,018.20	7,499.72	13,517.92
	<u>\$ 18,181.79</u>	<u>\$ 48,931.86</u>	<u>\$ 67,113.65</u>
<i>Less:</i> Interest earned .....	<u>2,510.39</u>	<u>13,849.55</u>	<u>16,359.94</u>
	<u><u>\$ 15,671.40</u></u>	<u><u>\$ 35,082.31</u></u>	<u><u>\$ 50,753.71</u></u>
Total Deferred Expenditure .....	<u><u>\$102,527.09</u></u>	<u><u>\$279,034.86</u></u>	<u><u>\$381,561.95</u></u>

### NOTES TO FINANCIAL STATEMENTS

November 30, 1964

NOTE: (1) The following options to purchase capital stock of the company (granted to directors of the Company) were outstanding at November 30, 1964, 57,500 shares at \$1.00 per share up to and including July 13, 1965.

Approved on behalf of the Board:

A. D. COSSAR,

J. F. McOUAT Directors

# CANADIAN MAGNESITE MINES LIMITED

## MANAGER'S REPORT

During the twelve-month period from June, 1964 to June, 1965, work has progressed on the concentration, calcination, and dead-burning of a 2,000-ton sample of our ore. This ore was mined at the property and shipped to the Beaucage pilot plant at North Bay for pilot plant scale concentration and calcination operations.

The technical problems encountered during this period affecting the density and hydration resistance of the dead-burned magnesia, now appear to be solved. These difficulties were reviewed at our special shareholder's meeting in December. We have progressed since that time in reducing and eliminating these variables, in order to produce a dense, hydration resistant, finished product, acceptable to the refractory industry.

We are now able to provide the consumer with samples of a dense, chemically-stable product, suitable for his requirements.

The concentrator operated from June until early October, and five hundred tons of concentrate were stockpiled. Recovery and grade were both satisfactory. Original estimates were that a concentrate representing 35% of the total feed, containing 66% of the total magnesite, would give a 92% MgO content in the dead-burned product. A typical mill run for one-day's operation is tabulated below:

August 28	Feed	— 34 tons
	Weight Recovery	— 38.5%
	Magnesite Recovery	— 67.2%
	MgCO <sub>3</sub>	— 96.3% equivalent to 93.1% MgO on a dead-burned basis
	Fe <sub>2</sub> O <sub>3</sub>	— 2.79%
	SiO <sub>2</sub>	— 0.37%
	Total Insoluble	— 0.5%

A multiple hearth roaster was purchased in the United States, dismantled, shipped to North Bay, and erected at the pilot plant. This roaster was used during October and November, to produce forty tons of caustic calcined magnesia from some of the flotation concentrate. This calcine was briquetted and bagged, ready for shipment for further processing. The 400-ton balance of the flotation concentrate remains stockpiled in North Bay, and will be used to provide large scale samples for consumer appraisal.

During the briquetting operation, samples were taken every half hour. These were dead-burned and the dead-burned material was tested for hydration resistance and density. Results from these tests showed that our product was chemically unstable, and that product density was not being controlled.

During December, a series of tests was run on our calcine by Canadian Magnesite Mines in North Bay and by our refractories consultant, K. A. Scheffer, in the U.S.A., using various chemical additives, as a means to stabilize density and hydration resistance.

As a result of these tests, it was decided that chemical additions alone would not solve our problem, and a further test program was carried out by Canadian Magnesite Mines, at the Mines Branch in Ottawa during January and February. This series of tests incorporated the best chemical results from the previous testing along with variations of pressure, fineness of grind, calcining temperature and dead-burning temperature.

It was found that small additions of boric acid in conjunction with fine grinding, gave a product density and chemical stability to meet most market requirements, when statically fired.

In order to obtain a comparison between static and rotary firing, and accumulate cost data on fine grinding, a one-ton sample of the briquettes from North Bay was finely ground in a ball mill, briquetted, and fired in a pilot plant rotary kiln in the U.S.A. It was found that retention time in the heat zone in this small

kiln did not allow time for densification to take place, and the density of the static fired tests was not duplicated.

During the interval that this one-ton test was in progress, the balance of our forty tons of briquettes was trucked to Canada Talc at Madoc for fine grinding. Twenty tons of these have now been finely ground in a Raymond Mill and a comparison with results from the fine grinding in the U.S.A., shows that much finer grind can be obtained using less power, with the Raymond Mill, than was previously experienced with the ball mill grinding.

Canadian Magnesite Mines has done further testing of this very fine, reground using boric acid calcine at the Mines Branch in Ottawa in recent weeks. Hydration resistance and density were the best yet achieved, on a static fired basis, and a one-ton sample is presently being prepared for firing in the Canadian Refractories rotary kiln at Kilmarnock, Quebec. Static fired samples of this material are going out for customer approval.

The data on one satisfactory test run is as follows:

Calcine, ground to -325 mesh, briquetted at 30,000 pounds per square inch, 0.4% boric acid added, burned at 1,700° Centigrade.

Density — 3.33

Acceptable — not less than 3.30

Loss on Ignition — 0.87%

Acceptable — not greater than 1.0

after exposure to 80 pounds

steam for five hours.

If rotary firing confirms the results of the static fired tests, the remainder of the concentrate in North Bay, and the calcined product now available, will be prepared as bulk sample for consumer testing on a large scale.

Respectfully submitted,

JAMES A. BATES. *Manager*

